

Animal Welfare and Housing Systems for Egg Laying Hens

What is Animal Welfare?

“Animal welfare means how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear and distress.”

- World Organization for Animal Health (OIE), an intergovernmental organization responsible for improving animal health worldwide.

Animal Welfare: The 5 Freedoms

The Five Freedoms are an internationally recognized set of guidelines originally developed in the 1960s, by an expert committee in the United Kingdom. The Five Freedoms represent guiding principles for many livestock organizations in terms of animal welfare.

The Five Freedoms are:

 Freedom from hunger and thirst	 Freedom from fear and distress	 Freedom from pain, injury or disease
 Freedom from discomfort	 Freedom to express normal behaviour	

Hen Housing Comparison

Conventional Housing	Hen housing system that has been the industry standard for several decades. No new conventional housing systems can be installed in Alberta after December 31, 2014.
Furnished Housing	Hen housing system that provides birds with more room (both floor space and height) than conventional housing. Furnishings are included to allow the hens to exhibit more of their natural behaviours, such as perches, scratching pads, nest boxes and dust baths.
Free-Run Housing	Hen housing system (barn floor or aviary) that allows free movement within the barn. These systems provide perches, litter (for foraging and dust baths) and nest boxes, which allow the hens to exhibit more of their natural behaviours.
Free-Range Housing	Hen housing system (barn floor or aviary) that allows free movement within the barn, while also providing outdoor access. The outdoor area is typically fenced off and uncovered, with the ground covered in vegetation for foraging.

LayWel Report: LayWel is a research project funded by the FP6 European Research Program and national funding from different EU countries. The LayWel project studies the welfare implications of changes in production systems for laying hens (see reverse).

LayWel – Welfare implications of changes in production systems for laying hens (2004 EU Research Project)

Indicator/Risk of Poor Welfare	Conventional Housing	Furnished Housing			Free-Run		Free-Range	Comments
		Small Group	Medium Group	Large Group	Single Level	Multi Level		
Injury, Disease, & Pain								
Mortality (Overall %)								
Mortality due to Feather Pecking/Cannibalism in Beak Trimmed Flocks								Genotype affects
Mortality due to Feather Pecking/Cannibalism in Non-Beak Trimmed Flocks								Genotype affects
Mortality due to Disease								
Infectious Disease and use of Therapeutic Drugs								Generally very low but more variable in non-cage systems, especially outdoor access
Predation								Low-variable in non-cage
Internal Parasites								
External Parasites (ex. mites)								
Use of Prophylactic Anthelmintics and Coccidiostats								Variable – outdoor highest risk
Osteoporosis/Low Bone Strength								
Keel Bone Deformation								
Bone Breaks During Lay								
Bone Breaks at Depopulation								
Bumble Foot								Variable, usually low
Beak Trimming								Beak trimming more likely in larger groups
Hunger, Thirst, & Productivity								
Feed Intake (g/hen/day)								Hens can usually eat to appetite
Water Intake								Water is generally freely available but outdoor hens may need to travel further and water could freeze in the winter
Feed Conversion								High productivity may increase risk of osteoporosis or fractures
Egg Production								High productivity may increase risk of osteoporosis or fractures
Behaviour								
Nest Box Eggs at Peak Lay (%)								Some birds may lay outside
Hen on Perch at Night (%)								Variable – can be 100%
Use of Dustbath								Variable
Foraging								
Social								Abnormal social behaviour in large group sizes or restricted space allowance
Behavioural Restriction								
Injurious Pecking								Variable risk increases with intact beaks
Fear, Stress, & Discomfort								
Fearfulness								'Victims' have no refuge in conventional
Corticosterone (end of lay)								
H:L Ratio (end of lay)								
Crowding/Suffocation								
Feather Pecking in Beak Trimmed Flocks								
Feather Pecking in Non-Beak Trimmed Flocks								Highly variable in most systems, with influence of genotype
Feather Loss								
Plumage Soiling								
Bumble Foot								Variation within and between flocks
Thermal Discomfort								
Dust								
Ammonia								
Dirty Eggs (%)								

'RED' Areas where risk of poor welfare is high	
'ORANGE' Areas where risk of poor welfare is variable	
'GREEN' Areas where risk of poor welfare is low	
Unknown risk to welfare (insufficient data)	

*For more information, please contact David Webb
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